In the Claims

This listing of claims will replace all prior versions, and listings, of the claims in the application:

Listing of Claims

1. (previously presented) An improvement in a method of microfabricating three dimensional structure in deformable silicone elastomer comprising photolithographically fabricating the three dimensional structure in the deformable silicone elastomer using semiconductor fabricating procedures, including reactive sputter deposition of a layer including silicon thereon to allow for the formation of masking layers on the layer sputtered on the silicone elastomer by means of which the structure is photolithographically microfabricated.

2. (previously presented) An improvement in a method of microfabricating elastomeric material having a characterizing surface tension comprising decreasing the surface tension of the elastomeric material and photolithographically processing the elastomeric material with decreased surface tension, where decreasing the surface tension of the elastomeric material comprising forming a silicon dioxide layer on the elastomeric material.

3. (previously presented) The improvement of claim 2 where forming a silicon

dioxide layer on the elastomeric material comprises sputter depositing silicon dioxide on the elastomeric material.

4. (previously presented) An improvement in a method of microfabricating an elastomeric material having a characterizing surface tension comprising decreasing the surface tension of the elastomeric material and photolithographically processing the elastomeric material with decreased surface tension, where decreasing the surface tension of the elastomeric material comprises forming a silicon dioxide layer on the elastomeric material by sputter depositing silicon dioxide on the elastomeric material in an argon-oxygen plasma.

5. (previously presented) An improvement in a method of microfabricating elastomeric material having a characterizing surface tension comprising decreasing the surface tension of the elastomeric material and photolithographically processing the elastomeric material with decreasing surface tension, where decreasing the surface tension of the elastomeric material comprising forming a silicon nitride layer on the elastomeric material.

6. (previously presented) The improvement of claim 5 where forming a silicon nitride layer on the elastomeric material comprises sputter depositing silicon nitride on the elastomeric material.

7. (previously presented) The improvement of claim 6 where sputter depositing silicon nitride on the elastomeric material comprises sputter depositing silicon nitride in an ~~3~~argon-nitrogen plasma.

8. (previously presented) An improvement in a method of microfabricating elastomeric material having a characterizing surface tension comprising decreasing the surface tension of the elastomeric material and photolithographically processing the elastomeric material with decreased surface tension, where decreasing the surface tension of the elastomeric material comprising forming a silicon layer on the elastomeric material.

9. (previously presented) The improvement of claim 8 where forming a silicon layer on the elastomeric material comprises sputter depositing silicon on the elastomeric material.

10. (previously presented) The improvement of claim 9 where sputter depositing silicon on the elastomeric material comprises sputter depositing silicon in an argon plasma.

11. (original) The improvement of claim 2 further comprising forming a silicon nitride layer on the silicon dioxide layer.

12. (previously presented) The improvement of claim 11 where forming a

silicon nitride layer comprises sputter depositing silicon nitride on the silicon dioxide layer.

13. (previously presented) The improvement of claim 12 where sputter depositing silicon nitride on the silicon dioxide layer comprises sputter depositing silicon nitride in an argon-nitrogen plasma.

14. (previously presented) The method of claim 2 where decreasing the surface tension of the elastomeric material decreases the surface tension of polydimethylsilicone.

15. (previously presented) The method of claim 2 where decreasing the surface tension of the elastomeric material decreases the surface tension of a room temperature vulcanizable (RTV) silicone elastomer (silanodimethyl polydimethylsiloxane).

16. – 20. (cancelled)

21. (currently amended) The improvement of claim 1 further comprising directionally etching the silicone elastomer ~~an elastomeric material~~ comprising providing an RF plasma etching system, creating an oxygen plasma in the presence of Freon in the RF plasma etching system, removing silicon tetrafluoride from the RF plasma etching system.

22. (previously presented) The improvement of claim 21 where removing silicon tetrafluoride from the RF plasma etching system comprises pumping the silicon tetrafluoride out of the RF plasma etching system.

23. (previously presented) The improvement of claim 21 where creating an oxygen plasma in the presence of Freon comprises creating the oxygen plasma in an approximately 90% oxygen and 10% Freon mixture.

24. (previously presented) The improvement of claim 21 where removing silicon tetrafluoride from the RF plasma etching system comprises maintaining the oxygen plasma under a partial vacuum of approximately 400 mTorr.

25. (cancelled)

26. (new) An improvement in a method of microfabricating a three dimensional structure in an elastomeric material comprising directionally etching the elastomeric material by providing an RF plasma etching system, creating an oxygen plasma in the presence of Freon in the RF plasma etching system, removing silicon tetrafluoride from the RF plasma etching system.

27. (new) The improvement of claim 26 where removing silicon tetrafluoride

from the RF plasma etching system comprises pumping the silicon tetrafluoride out of the RF plasma etching system.

28. (new) The improvement of claim 26 where creating an oxygen plasma in the presence of Freon comprises creating the oxygen plasma in an approximately 90% oxygen and 10% Freon mixture.

29. (new) The improvement of claim 26 where removing silicon tetrafluoride from the RF plasma etching system comprises maintaining the oxygen plasma under a partial vacuum of approximately 400 mTorr.